

# Abstract Form

Abstract is to be typed in a 10 point font/typeface (Times Roman preferred) and must fit in the space below; additional pages may not be submitted.

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**TITLE:** A Proposal for Increasing the Pool of Potential Organ Donors Through Implementation of the Spanish Model

**DESCRIPTION OF ACTIVITY:** The Organ Donation process is simplistically divided into 3 phases: Identification of ALL potential donors, obtaining consent for donation and physiologic support of the donor until the donor process can occur. It is clear that **identification of all potential donors** is the corner stone of this process. A great deal of energy has been expended to improve donation rates by increasing the consent rate for organ donation. Unfortunately this has met with limited success. This proposal seeks to increase the identification of potential organ donors. Traditional organ donors have been young people suffering from traumatic brain injury. These patients are typically cared for in large referral hospitals. Consequently these facilities are the focus of most organ donation education activities. The focus of the **Spanish Model** for increasing organ donation is the identification of the "expanded donor", a patient population commonly cared for in small community hospitals throughout the nation. The core of the Spanish Model is the identification of all potential organ donors and the appropriate physiologic management of these donors. "The donation process is a long and complex one which cannot be left to its free evolution but has to be carefully protocolized and over viewed to avoid any improvisation. Hence a responsible **key person** should be appointed in each hospital with the specific role of carefully monitoring the process and determining where and when the efforts should be directed"<sup>1</sup> The key person:

- Must be a well respected member of the hospital staff, closely associated with the ICUs. The responsibilities of this person include the development of a protocol for the identification of potential donors including the roles of various hospital personnel in the identification process.
- Develops educational efforts regarding the identification and physiologic support of organ donors directed at non transplant personnel.
- Conducts a daily review of all ICU admissions
- Creates and monitors a protocol for the support of organ donors.
- Develops and educates a team of hospital personnel responsible for approaching the family to request donation.
- Act as a liaison between the hospital and OPO staff.

## DESCRIPTION OF EVALUATION (if completed, provide results):

The study design is as follows:

- 10 hospitals will be identified within a given UNOS Region. 5 will be non-transplant metropolitan hospitals 5 will be rural hospitals.
- Each hospital will hire a **Key Person** for a period of 2 years.
- The key person will be responsible for the activities outlined above.
- At least 2 educational programs related to the identification and management of organ donors will be conducted for the medical and nursing staffs at each facility each year.
- A detailed database will be maintained to monitor the activities of the project on an ongoing basis.
- At the completion of the project (2 years) the absolute and percent change in the number of organ donors will be compared to hospital specific historical controls. In addition the number of organs recovered and transplanted and their function will be tracked.

When the principles of the Spanish model were implemented in Spain there was an overall increase in organ donation of almost 90% entirely the result of increasing the pool of organ donors. Small hospitals showed the largest improvement, an increase in organ donation of 167% during a time when organ donation at transplant centers increased 67%<sup>1</sup>

<sup>1</sup> "Organ Donation for Transplantation - The Spanish Model" Editors: R. Matesanz, B. Miranda. Organization Nacional De Trasplantes.

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## **Increasing the Potential Donor Pool - Project Proposal -**

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### **Introduction**

Organ availability for transplantation is primarily dependent on **Identification of all potential donors**. The various steps of the donation\procurement process can and should be improved. However, all these steps are irrelevant if the process is not initiated by identifying the potential organ donor.

There are different ways to define the size of the potential donor pool. Charts reviewed for patients who died from brain death is one acceptable and used method. Reviewing the data from these types of studies and others in the US and in Europe, repeatedly support the argument that about **20-50% of the potential donors are not being identified** and were never approached as organ donors.

It is a well established reality that large medical centers, some with active transplant programs, are the main "source" of organ donors. That is why most of the effort to improve the rate of procurement is usually directed to these centers. However, any small community hospital with basic services should have at least a few patients a year who die with the diagnosis of brain death. It may not be the "classic" organ donor, e.g. a young patient who died from blunt or penetrating injury to the brain, but a 55-65 year old patient who died from CVA or ischemic brain damage due to cardiac arrest. These types of potential donors can certainly become actual donors if they are recognized by the hospital staff.

In a report of the "Spanish Model" for improving the organ procurement rates, the contribution of non-transplant small hospitals to the overall donation activity, increased from 23.6% in 1989 to 33.6% in 1995, while the total number of donors rose from 550 in 1989 to 1037 in 1995.

This indicates that the actual change in the donation activity of the small hospitals was **from 130 donors in 1989 to 348 in 1995, an increase of 167%.**

This is in contrast to an increase of **64%** in the number of donors from large transplant medical centers.

Therefore, it is clear that the effort to increase the potential organ donor pool should not bypass any hospital. This is one of the basic concepts of the "Spanish Model"- To create a system that would actively reach **all hospitals**.

Family consent rate is the target of an extensive public education campaign in the USA and Europe. In fact almost the entire effort to increase the number of organ donors is directed at different ways to increase the family consent rate. Unfortunately there was little change in the overall consent rate over the last few years. This is true in the USA as well as in Europe. What is striking in the report of the "Spanish Model" is that the significant increase in number of organ donors in Spain from 1989 to 1995 (**88.5%**), occurred while the family consent rate has remained stable at around 75% during the last few years. **This implies that the increase of almost 90% in the number of organ donors in Spain is entirely the result of increasing the potential donor pool.**

It is evident from the discussion above that the creation of a proactive system for donor identification and donor management is essential to maximize the potential donor pool. This system should be in action on a continuous basis in any hospital where patients with severe brain damage are being treated. **"The difference between -waiting for them to come- or insistence in detecting any potential donor is nearly always the reason for the discrepancies in the rates of donation between hospitals or between different areas of the country" (1).**

### **The "Spanish Model"**

The system that was implemented in Spain over the last few years has been referred to lately as the "Spanish Model" for maximizing the availability of organs for transplantation. As was shown above, the core of the Spanish system was to optimize the donor identification and the donor management.

The key components of the "Spanish Model" are:

1. "The donation process is a long and complex one which cannot be left to its free evolution but has to be carefully protocolized and over viewed to avoid any improvisation. Hence a **responsible key person** should be appointed in each hospital with the specific role of carefully monitoring the process and determining where and when the efforts should be directed" (1).
2. The **key person** in the hospital should be a member of the hospital staff, that in addition to his/her regular position needs to make a part time commitment

to the organ donor identification and the donation process.

This **key person** needs to be well respected in his hospital, closely related to the ICU's, report directly to the medical director of the hospital and the OPO, and be accountable for his/her performance.

3. The **key person** should start the following activities in the hospital:
  - "Development of a protocol for identifying potential donors that records the appropriate sequence of events and clarifies the specific roles and responsibilities of hospital professionals in the donor identification.
  - Educational programs for health staff about the donation/transplantation process. Health professionals not involved in transplantation are the main target audience for these educational efforts (1).
  - "Daily revision of all patients in the hospital admitted to the units that take care of critically ill patients with severe brain damage.  
Creating a protocol for organ donor management that will formulate the specific issues of the medical management of organ donor with the aim to keep the organ donor in the best physiological status for organ donation.  
"Promotion of specific educational and research programs for physicians and nurses working with organ donors, can be very helpful in improving the efficacy rates of donor maintenance (1)."
4. The **key person** should create a team to approach families with the request for donation. The request for donation should be performed skillfully by a team who need specific training.
5. A close working relationship and efficient communication is required between the **key person** in each hospital and the OPO of the area. The OPO staff should work very closely with each of the **key person** in the various hospitals. The coordination of the donation process and the harvesting procedures will be the combine responsibility of the **key person** and the OPO.
6. The system should continuously monitor the efficiency of the organ donor identification process, the management of the organ donor, and the procurement procedure. Any weak points should be addressed by the **key person** and the OPO.

#### **Project proposal - OPO**

Any OPO can choose to implement the "Spanish Model" as it has been described above in hospitals that have low rate of procurement. A period of at least one year and preferably two, would be necessary to show results.

For the purpose of the initial proposal, the project will include 10 hospitals, 5 non-transplant centers in metropolitan areas and 5 hospitals that are regional

medical centers in rural areas. In each participating hospital a **Key Person** will be hired for two years. The responsibilities of these **Key persons** will follow what was described above in the "Spanish Model" section. In each participating hospital at least two organized educational programs for the medical staff will be given in each year of the project. The selection of the participating hospitals will be done by the OPO and the transplant community in the region. A state of the art communication will be established between each **key person** and the OPO.

The number of participating hospitals can be changed and other OPOs in the country can be included in the project, if there are adequate resources and the motivation to do so.

A very detailed database will be created to document and monitor the different activities of the project on a continuous basis. A report will be generated every six months by the **key person** and the OPO to describe the progress of the project.

The educational programs should be designed based on available programs from the USA (the Partnership organization) and Europe (the EDHEP, European donor hospital education program).

### **Budget**

The estimated budget is based on **10 participating hospitals for two years**. The budget may change based on the number of participating hospitals or the length of the project. All the figures are an estimation and a further detailed budget should be prepared if the project is going to be implemented.

1. Hiring 10 <b>key persons</b> , part time (\$10,000 annually)----	\$ 200,000
2. Education programs (\$3,000 per program) -----	\$ 120,000
3. Data base development and communication equipment ----	\$ 10,000
	-----
<b>Total: (for two years)</b>	<b>\$ 330,000</b>

In the "Spanish Model" presentation in Barcelona last summer it was made clear by the Ministry of Health of Spain, that all the expenses of implementing the system were significantly lower than the money saved by increasing the number of donors and thus reducing spending on dialysis and other medical related costs in patients with end stage organ failure.

### **Summary**

This proposal is aimed at increasing the potential organ donor pool and thus increasing the actual number of organs for transplantation. It is proposed to use the "Spanish Model" principles and methods in a test project to include 10 non-transplant hospitals for two years. The estimated budget is around \$330,000, however this figure can change when the final budget is prepared.

### **References**

1. "Organ donation for transplantation - The Spanish Model". Editors: R. Matesanz, B. Miranda. Organizacion Nacional De Trasplantes.

## INCREASING THE POTENTIAL DONOR POOL

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## INCREASING THE POTENTIAL DONOR POOL

- Assuming no change in consent rate - 50%
- Increasing the potential pool from 30/m/y to 50/m/y.
- Resulting is 66% increase in the number of actual donors.

## DISTRIBUTION OF DONORS

Legend: ■ Hospitals, □ Tx-Centers

X-axis: Hospitals Ratio:H/TxC, % of donors

## DISTRIBUTION OF DONORS

## INCREASING THE POTENTIAL DONOR POOL

Legend: □ Current, ■ Expected

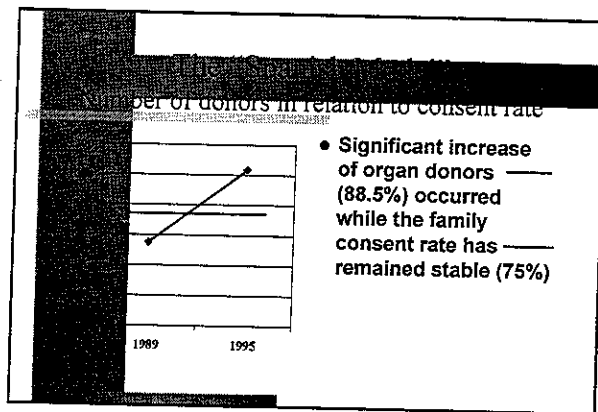
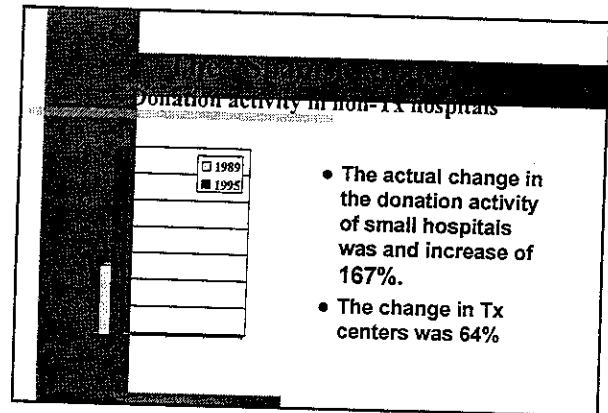
- Assuming that only 50% of non donor hospitals will have 1 donor / year
- This will result in 40% increase in number of donors.

## INCREASING THE POTENTIAL DONOR POOL

- Define the potential
- Identify the donor
- Preparation of brain death
- Referral
- Managing the donor

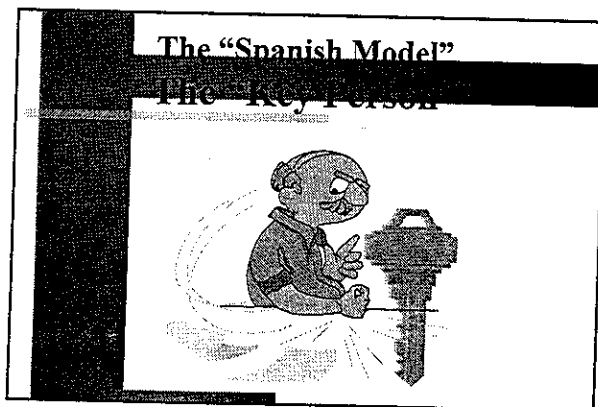
“...tion process is a long and complex one which cannot be left to its free evolution but has to be carefully planned and over viewed to avoid any improvisation.”

“...responsible key person should be appointed in each hospital with the specific role to carefully monitoring the process and determining where and when the efforts should be directed”



...difference between - waiting for them to come - or insistence in detecting the potential donors available


...reason for discrepancies in the rates of donation between hospitals or between different areas of the country”



- ### The Key Person
- Member of the hospital staff
  - Well respected
  - Additional paid part time commitment
  - Closely related to the ICU's
  - Reports directly to hospital director
  - Be accountable for his/her performance




### The "Spanish Model"

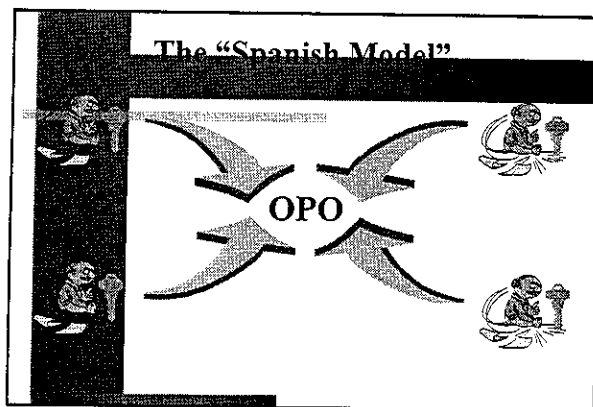


- Protocol for identifying all potential donors: sequence of events and specific roles of hospital professionals.
- Daily revision of all critically ill patients with severe brain damage.
- Protocol for organ donor management.

### The "Spanish Model"



- Creating a skillful highly trained team to approach families with the request for donation.
- Promoting specific educational programs for physicians and nurses.
- Addressing any weak points in the efficiency of the organ donor identification process.




### Project Proposal - OPO

A PROPOSAL FOR TWO YEARS


- 20 Hospitals  
Not transplant centers
- 10 Hospitals in Metropolitan areas  
10 Regional hospitals in rural areas
- 10 Hospitals (5,5)
- 10 Hospitals (5,5)

### Project Proposal - OPO

#### The Study Group

Each participating hospital a  will be trained for TWO YEARS.

At least two organized educational programs for the medical staff in each of the project.


State of the art communication between  and the OPO.


base to monitor the project.

### Project Proposal - OPO

#### Budget - Two Years

\$330,000



- Hiring 10 , part time (\$ 10,000 annually).
- Education programs (\$ 3,000 per program).
- Database development and communication equipment.

